

Directions, Instructions and Suggestions for Completing your

HAWKEN RIFLE KIT

Introduction

The kit which you have purchased contains the finest production parts available. Ninety-five percent of the actual work has been done for you. All inletting, tolerances, spacing, surface contours, etc., are exact to our production specifications. **The thousands of top quality rifles produced in our facility are living proof that your Hawken Kit is both workable and practical.** Equipped with these components, unlimited time and sufficient patience and skill, you can, in fact, produce a higher quality finished product than our factory rifle. You can do this if you approach this project in a proper frame of mind.

Proper Approach

The text of most instructions tend to revolve around such words as "simple, quick, easy, enjoyable." Building your rifle will be enjoyable if you decide beforehand that you are going to take your time and that you are going to do the job properly. Simple! Quick! Easy! Those words are out. While the project is not in anyway difficult, **it will require your time, your patience and your skill.**

First of all, the task before you is one of **finishing and assembling, not constructing!** This means that you will use **finishing tools only.** You will not use: planes, spokeshaves, draw knives or overly coarse rasps. The use of such tools will tend to remove too much material and they may catch and pick up end grains. **You will use:** medium coarse rasps, files, screw drivers, "C" clamps, center punches, drills,

sandpaper and emery paper. **You will require** a small "home type" vise for holding parts and you will require a clean strong work surface of the type suggested.

The following instructions cover a series of suggested steps which are required to finish your rifle. While it is not specifically stated elsewhere in the text, **you should not attempt to completely finish each section as you work through the various steps.** The trick in producing a fine rifle is to work all parts progressively and repeatedly, carefully blending the wood to the metal and improving, rather than destroying, the flowing lines and contours.

To do this properly, you must work on the overall project. First run through the various steps bringing your rifle to a "rough finished" form. Then go back and work through the same steps using finer tools and materials to create finished surfaces and an extremely close wood to metal fit.

When examining your kit you will note that parts are packaged in groups for easy identification. For example, all sight parts are contained in one package. All trigger assembly parts are contained in another package, etc. Referring to the assembly drawing (page 6) will help to identify both the part and its placement. The four color photograph which appears on the outer package may be used as a comparison. It pictures our finished factory rifle and illustrates how we finish off the various surfaces. Feel free to deviate if you wish. Customizing a rifle to your taste is a major advantage of this "build it yourself" method.

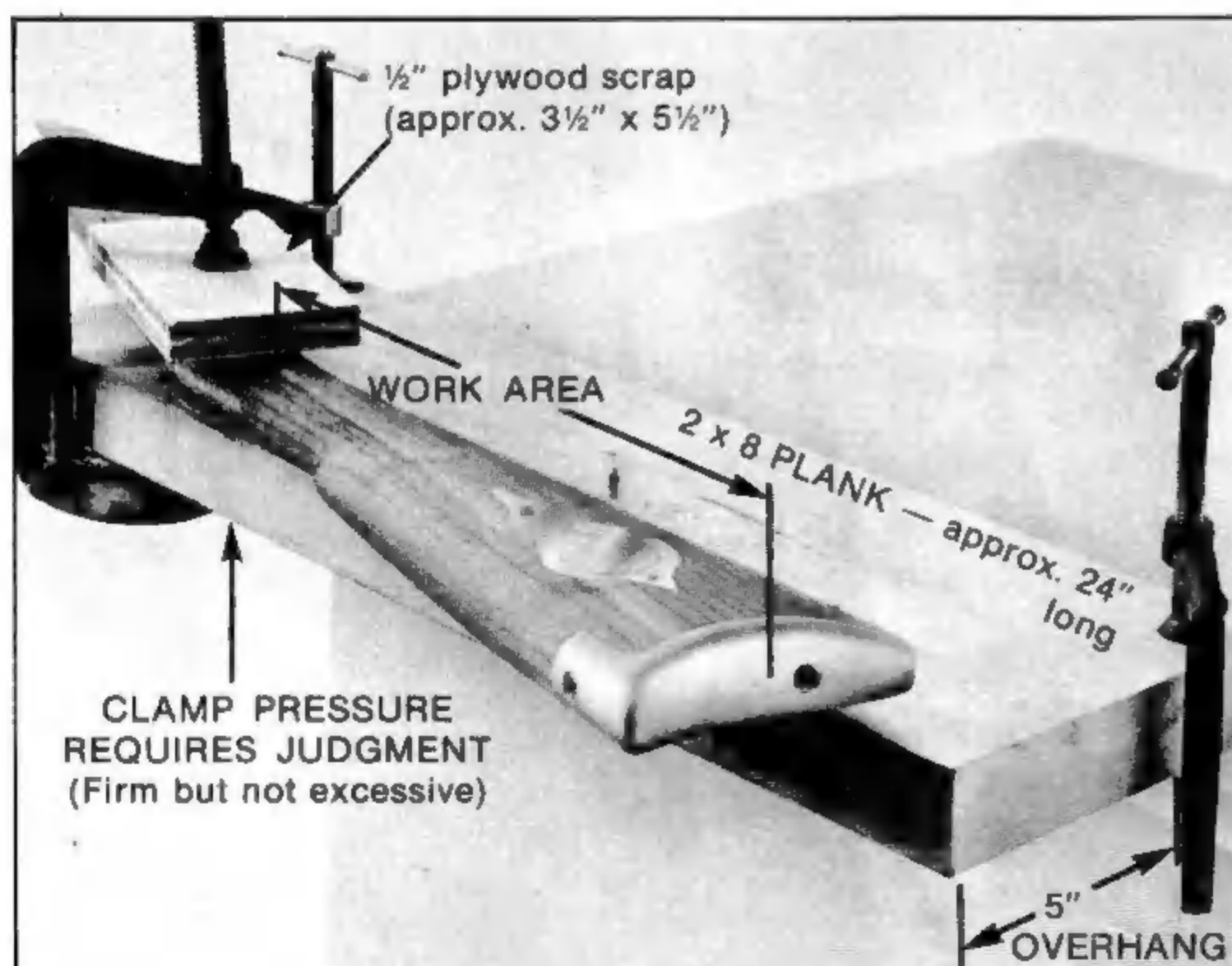


FIGURE 1 WORKING THE BUTT STOCK

NOTE: Stock is turned so that cheek piece (on left side) clears plank surface.

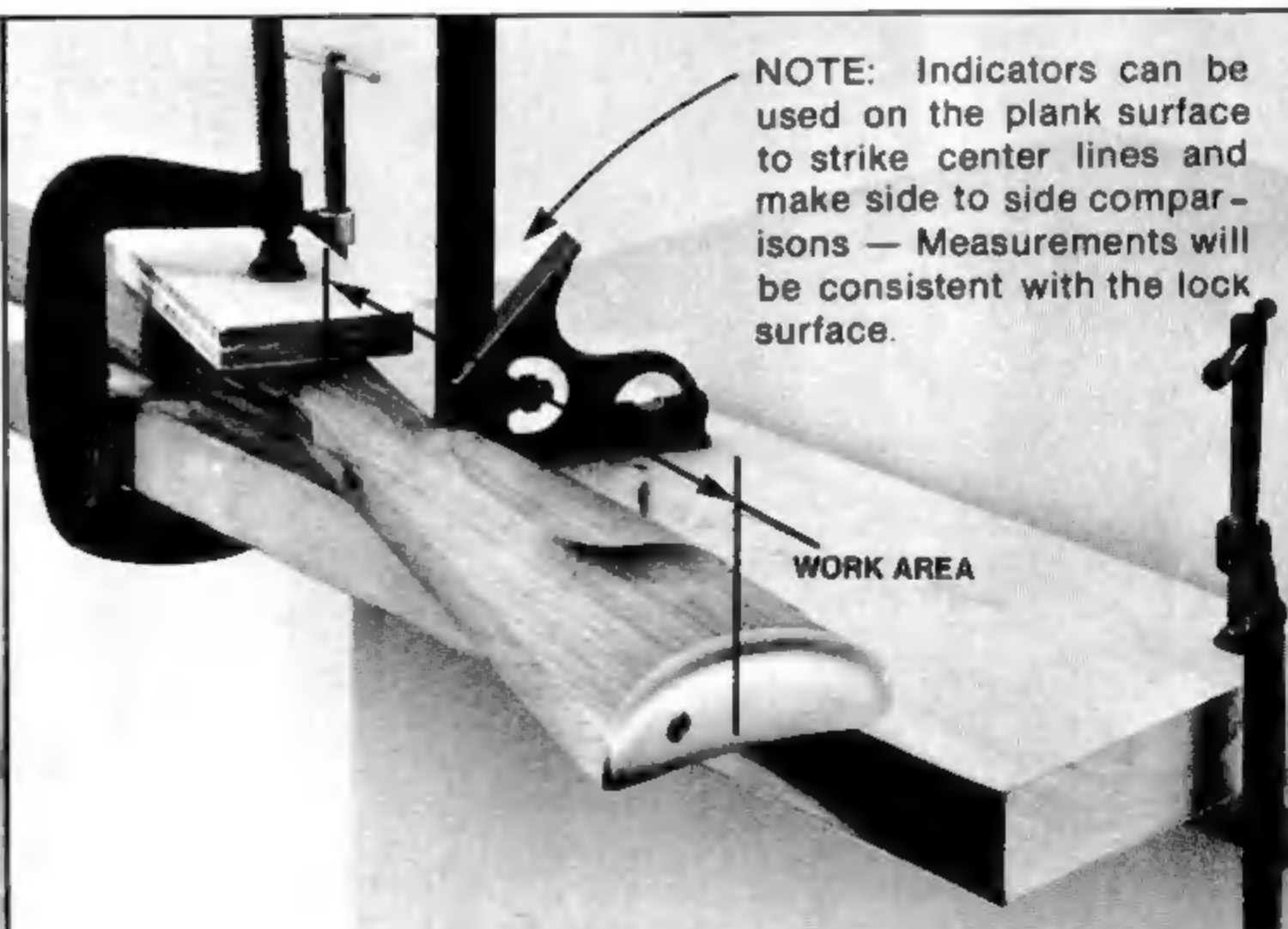


FIGURE 2 WORKING THE BUTT STOCK

NOTE: Stock is turned so that the butt plate section clears plank surface.

Clamping & Work Surface

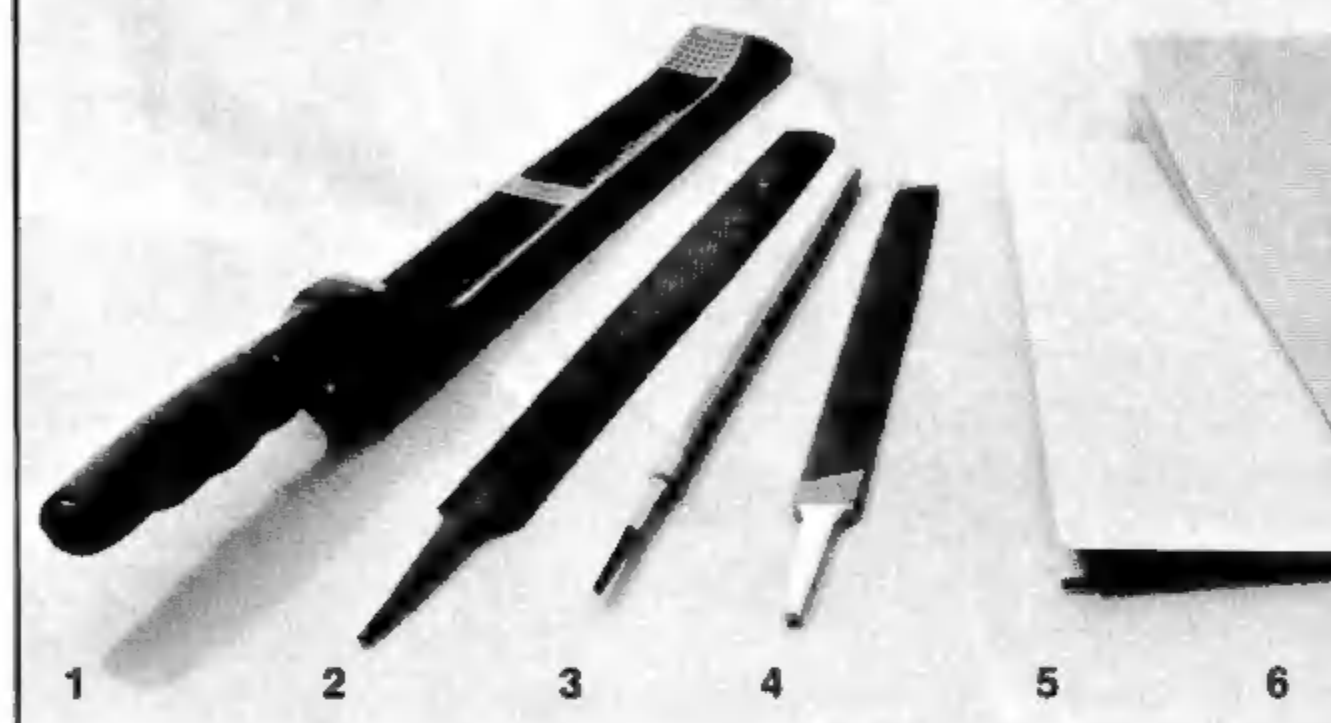
Craftsmen who have had considerable experience at building furniture, etc., are often confounded when faced with a multi-shaped project such as building or finishing a gun stock. Their experience is totally related to squared flat surfaces which easily lend themselves to the use of squares, straight lines, etc. Working on a gun stock is really not much different but it does call for a certain "relaxing of the rules" which is more demanding upon visual judgment than specific measurement. **Here we make use of those few flat surfaces which are available to us and we use them to the maximum.** On your Hawken stock there are **three surface flats** (right and left side of lock surface and top of barrel channel). **These surfaces are important!** Not only do these "flats" allow us to clamp the stock firmly at various points, but they also afford us the use of a **fourth flat area** (blank surface) for making measurements, comparisons, striking center lines, etc. (see Figures 1 & 2).

We strongly recommend that you use our suggested surface arrangement and that you **do not attempt to finish the stock while holding it in your lap, etc.** Short cut methods can be made to work but they will not afford the control necessary to conserve existing edges and to produce the clean flowing lines which are indicative of good craftsmanship. Also, it is extremely easy to drop a stock which is held in a haphazard manner. Dropping your stock on a hard floor can finish the project before it begins.

Working the Butt Stock Section

First, inspect the stock and note that it is equipped with a Forend Cap, Butt Plate and Patch Box. This hardware has been factory installed to insure proper placement and to protect the edges of the stock itself. The steel working screws which secure this hardware should be left in place until the job of finishing is completed. In final assembly, these working screws should be replaced with the brass screws provided.

USE ONLY FINISHING TOOLS TO AVOID CUTTING TOO DEEPLY.



- 1 — Surform® type rasp
- 2 — Cabinetmakers rasp (approx. 10" length) Regular-Half-round
- 3 — Wood rasp (approx. 8" length) Bastard-round
- 4 — Mill file (approx. 8" length) Bastard-single cut
- 5 — Medium sandpaper (use judgment — grits vary with brand)
- 6 — Fine sandpaper (use judgment — grits vary with brand)

To help you conserve edges, etc., we have factory sanded the Butt Plate, Patch Box and Forend Cap areas. This wood to metal sanding will save you time and help to insure a more perfect job.

With the stock supported (see Figures 1 & 2) use your medium sandpaper (wrapped on a block of wood) to work the butt stock area down to a relatively smooth condition. Use your rasps and files (with discretion) in the wrist area to smooth out any small bumps. Do not try to totally finish each section of the stock. Simply smooth it down to a rough finish (**conserving all of the contour lines**) and go on to the next section. Use particular care around the cheek piece to insure that the lines are clean and flowing. Your round rasp will be very useful when working the oval shape under the cheek piece.

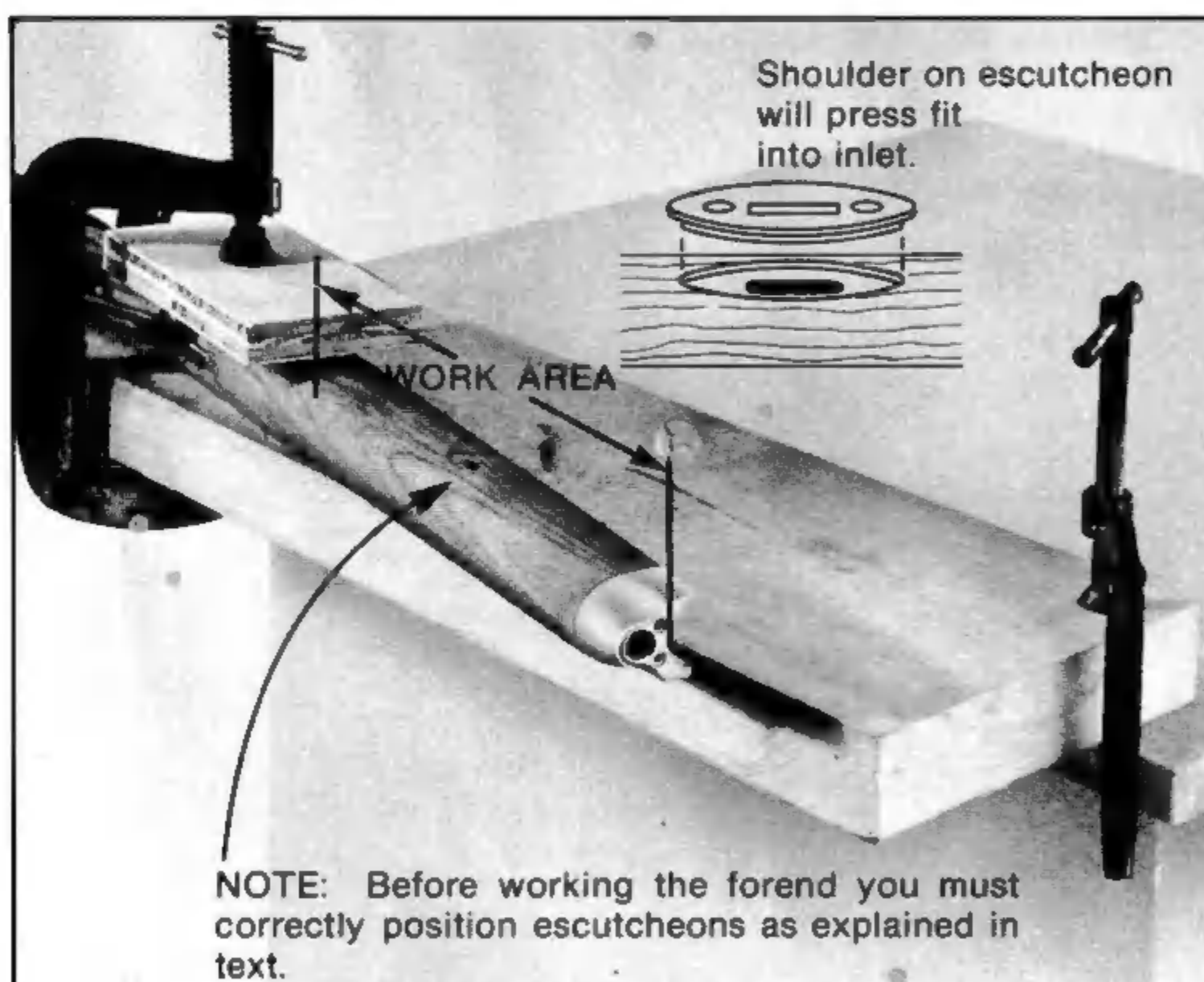


FIGURE 3 WORKING FOREND (BOTH SIDES)

NOTE: By flipping the stock and clamping it in the same manner, the opposite side of the forend can be worked.

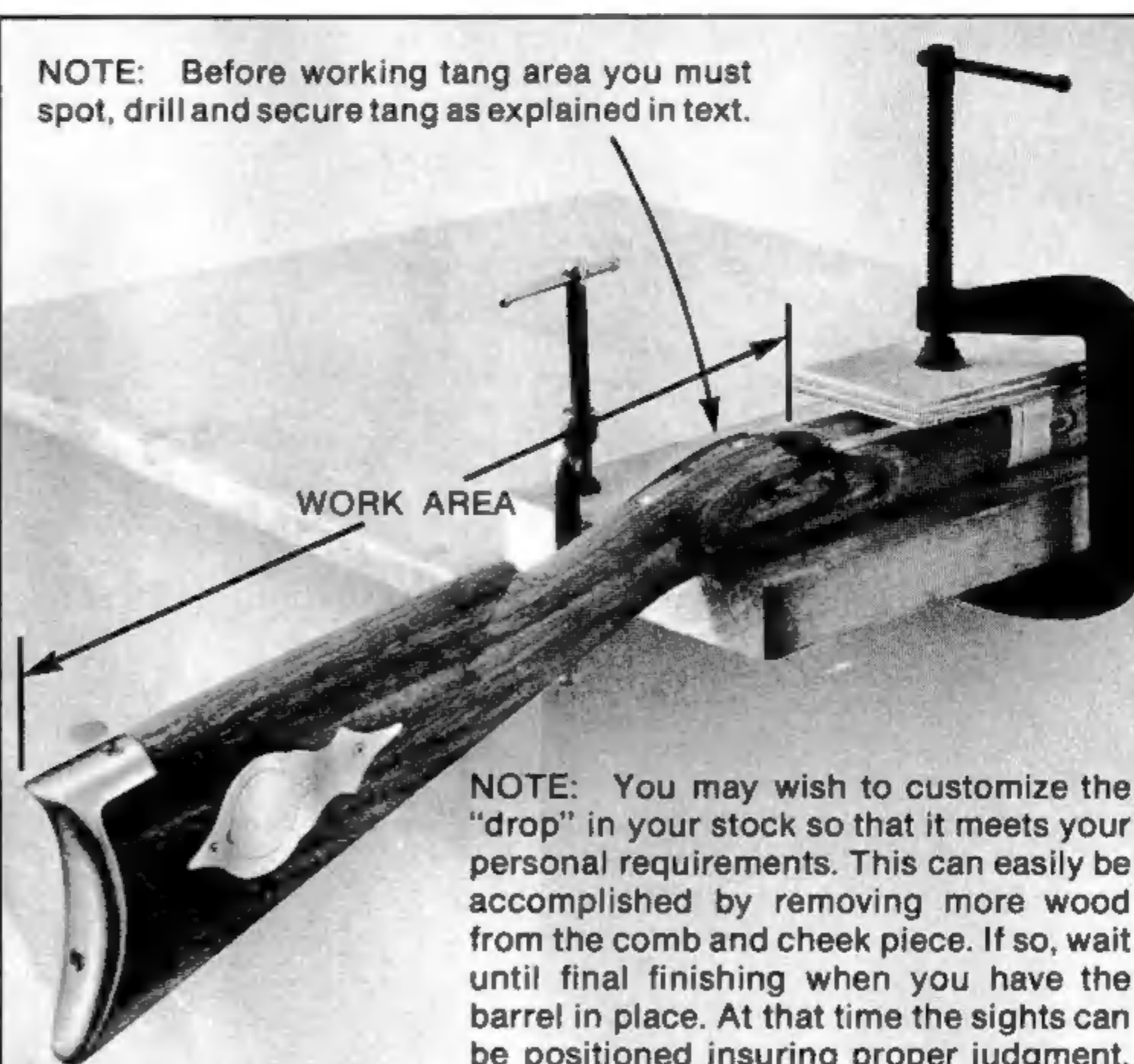


FIGURE 4 WORKING COMB & TANG

Working the Forend Section

Clamp the stock as shown in Figure 3 and secure the escutcheons. These forend escutcheons are designed with a slight shoulder (on the underside) which fits exactly to the stock inlet. Press the shoulder into the inlet and carefully spot the center of each screw hole with a sharp center punch. Drill the screw holes carefully (1/16" hole). Pick up the screw direction from the part surface as explained in Figure 7.

Once both escutcheons have been correctly positioned and secured, they may be removed until final finishing.

Work the wood as you did on the butt section. Use great care to insure that the lines are flowing (not bumpy) and the edges (particularly the barrel channel and escutcheon inlet) are not destroyed.

Working the Comb and Tang Section

Before you work on this area of the stock, you must position and secure the tang so that you can blend the wood surface to the unfinished part. **This is best accomplished with the tang and barrel in place.** Hook the barrel and tang section together and place them in position in the stock. Tap the muzzle gently (with plastic hammer) to insure that tang is tight against the "breech wall portion" of the stock. Now, tightly wrap masking tape around the barrel and forend so that it cannot move from this position. Clamp the stock and barrel as shown in Figure 4.

Carefully spot, drill (1/8" hole) and secure the tang with the screws provided (see Figure 7). Using your rasps, files, sandpaper, etc., carefully work the surface down to the proper dimensions. Again use care not to alter the contour lines, edges, etc. Remember long flowing lines, not lumps or bumps!

Working the Toe & Trigger Section

Clamp the stock as illustrated in Figure 5. Here again you must work the wood to the metal and, therefore, you must secure the trigger plate before you can go further.

Position the trigger plate in the inlet. Spot, drill (3/32" hole) and secure the part with the screw provided. See Figure 7 for proper drilling procedure. Using your file, sandpaper, etc., carefully work the surface down to the trigger plate. Be particularly careful to conserve the straight line and flat surface which runs from the toe to the back trigger.

Working the Lock Flats

Now this business of visual judgment comes into full play. First you must work the lock flat insuring that the lock itself is seated properly. Next you must blend the wrist, forend and lock flats together improving rather than destroying the original contours. **Remove the hammer from the lock as indicated.** Bottom the lock plate in the inlet and secure it (from the opposite side) with the bushing and screw provided (see assembly drawing). Secure the stock as illustrated in Figure 6. Work the lock flat down until it **almost conforms** with the lock plate surface. **Don't go too close, or you will mar the finished surface of the lock.** Blend surfaces as explained in Figure 6. Remove the lock plate, screw and bushing and flip the stock to the opposite side. Secure the stock in the same manner. Now, work this side of the stock so that it conforms in silhouette with the lock side (see Figure 6). Be certain to blend all lines improving rather than destroying the original contour.

NOTE: FLINT LOCK MODELS REQUIRE MINOR INLETING which is obvious when the lock is placed in position. The wood must be relieved so that it clears the curved, rear section of the pan area. This small section (approx. 1/8") should be scribed with a sharp knife and carefully cut away with a chisel.

NOTE: Before working trigger area, you must spot, drill and secure trigger plate as explained in text.

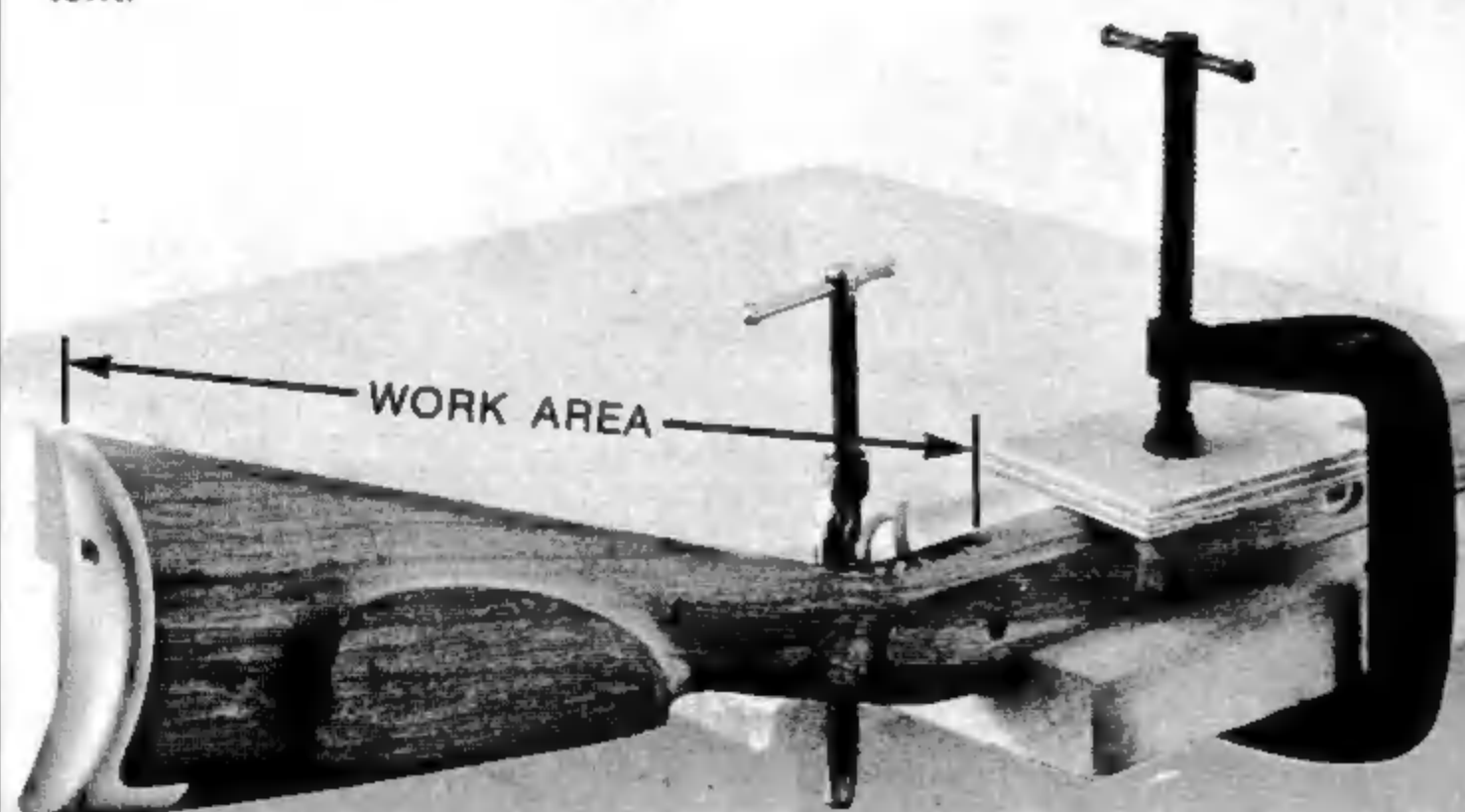


FIGURE 5 WORKING TOE & TRIGGER

WORK LOCK SIDE FIRST. BLEND TO FOREND & WRIST LINES WITHOUT DESTROYING CONTOUR LINES.

CENTER

NEXT, WORK REVERSE SIDE MAKING IT CONFORM TO LOCK SIDE IN SILHOUETTE.

NOTE: Secure stock to plank with masking tape.

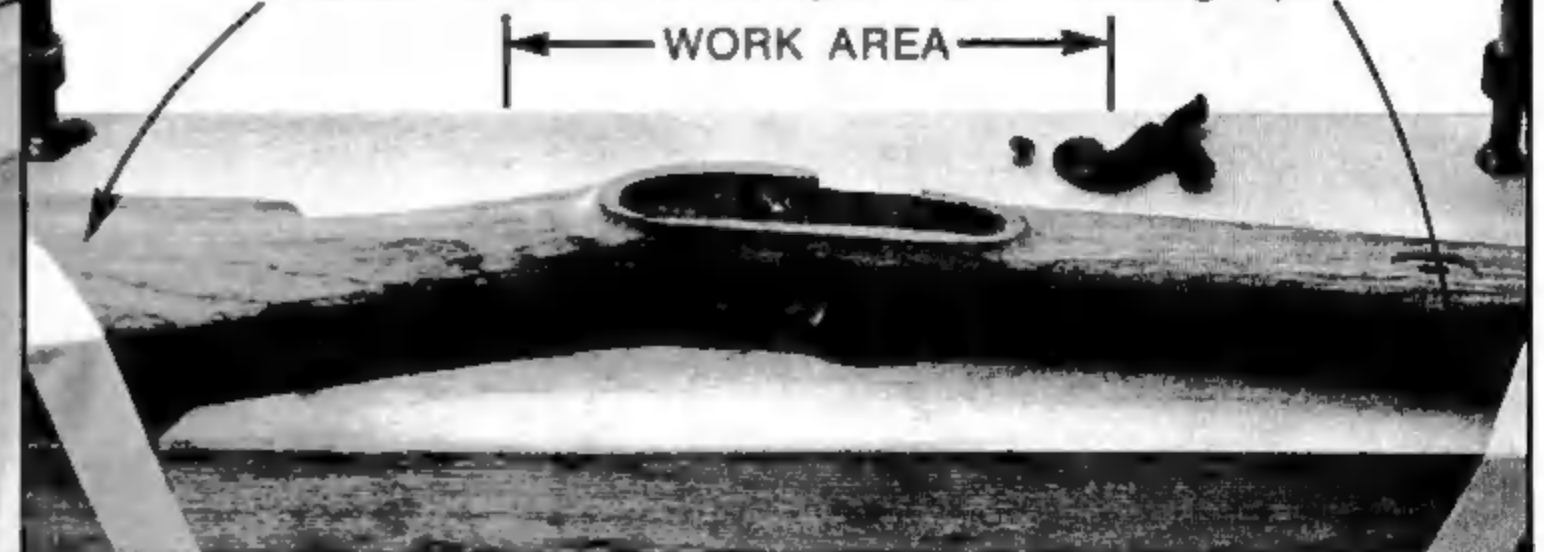
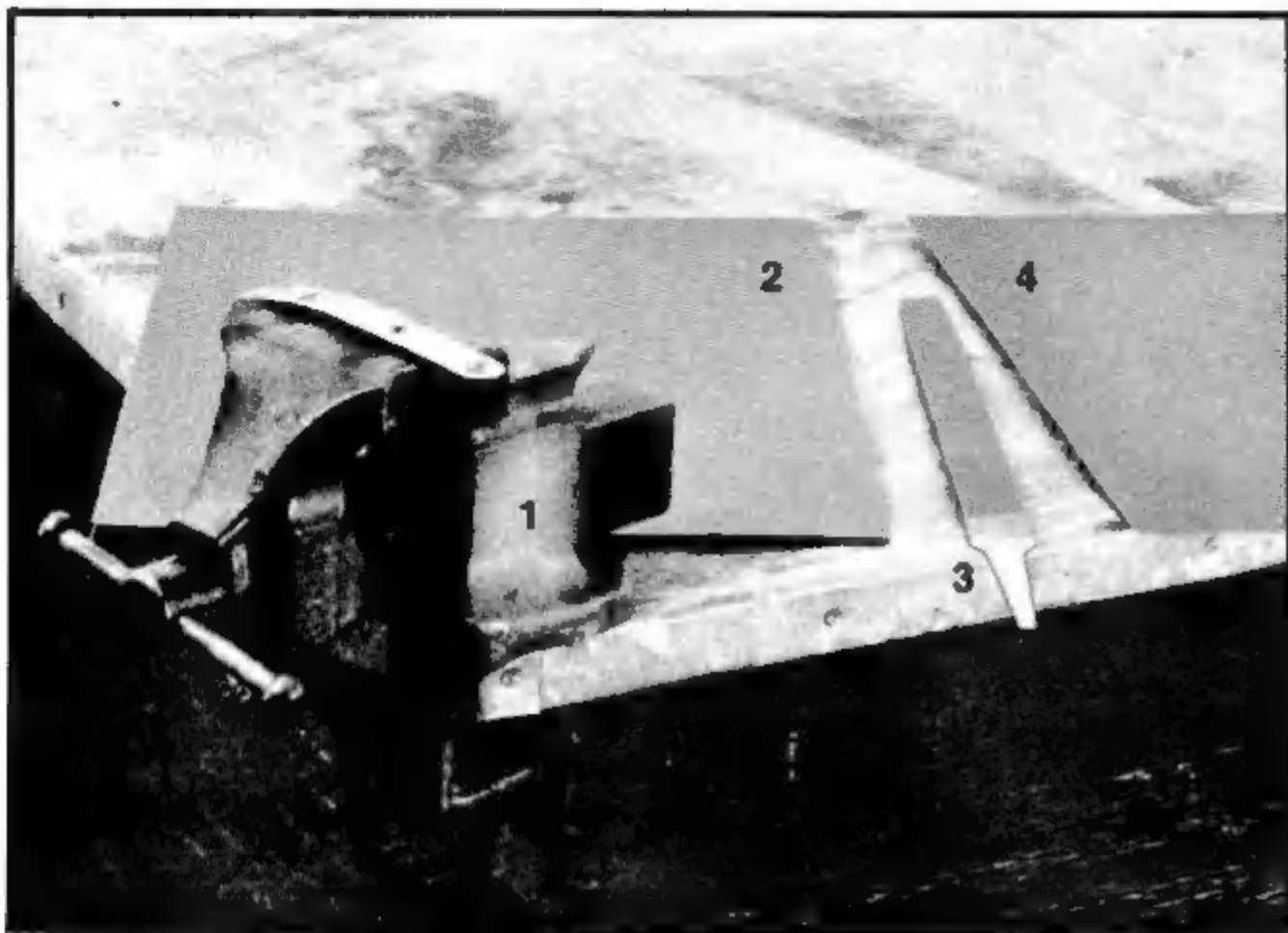


FIGURE 6 WORKING LOCK FLATS

NOTE: By flipping stock and securing with tape in similar manner, the opposite side of the stock can be worked.

Draw Filing Parts

At this stage your stock should be worked down to a fairly close "wood to metal" fit and its flowing contour lines should very much resemble a finished rifle. Now it is time to work on the metal parts and a few additional tools will be required.



- 1 — A small vise to hold parts
- 2 — Emery cloth (240 grit or equivalent — use judgment)
- 3 — Mill bastard file (approx. 8" length)
- 4 — Crocus cloth or fine emery (400 grit or equivalent — use judgment)

Work your barrel first, it should prove easiest due to its long, flat conforming surfaces! Clamp the barrel as shown in Figure 8 and proceed as instructed. Do small sections (approx. 4") at a time and then move on. After an entire flat is filed, wrap emery cloth around the file and polish in the same manner. Always use the emery and file in conjunction so that the surface remains **absolutely flat**.

Working with hand tools, a professional can properly draw file and polish one barrel in about 4 hours time. To do it properly, it should take you about 8 hours, so don't rush it. The trick is to learn how to do it correctly and to enjoy it. Pace yourself! Do about one flat in one evening — but do it right!

After you have worked the barrel, you will be better equipped to take on the various parts. These are somewhat harder for their curved surfaces require more judgment.

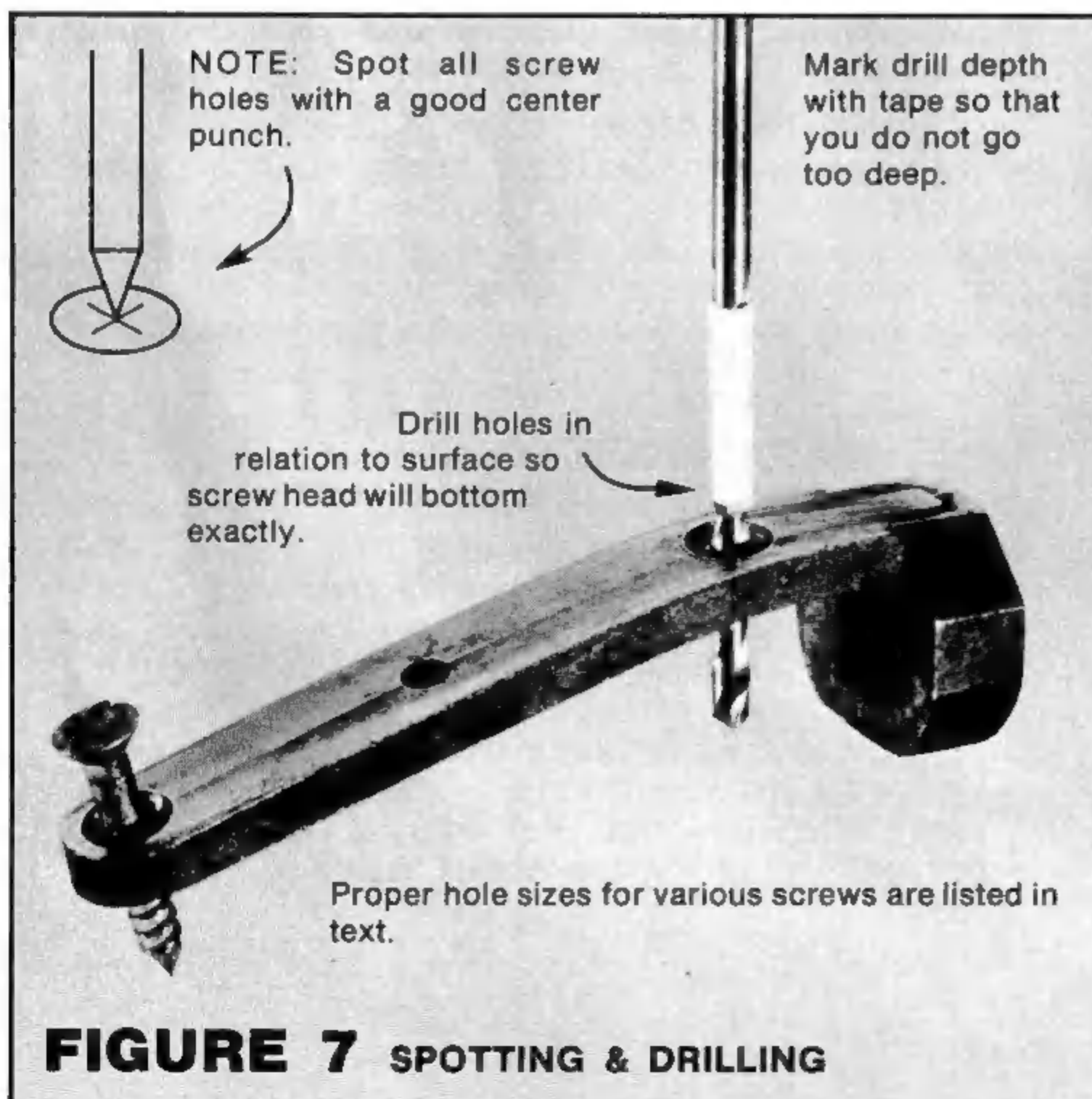
Clamp your parts securely in a vise and work their exposed surfaces as you did the barrel flats. The brass parts will be easiest as they require very little filing. Emery cloth wrapped around wood doweling will work best on the inside ovals of the trigger guard, etc.

NOTE: The following parts do not require filing or polishing.

- All Springs (leave unfinished)
- Rear Sight Parts (Matt finish desirable)
- Front Sight (Matt finish desirable)
- Lock (Supplied in finished condition)
- Trigger and Trigger Plate (If the trigger plate is not marred when working the stock, it can be left with a matt finish.)
- Nipple (Replaceable part — leave unfinished)
- Barrel Lug (Matt finish desirable)
- Ram Rod Cap, Jag and Jag Adapter (See Ram Rod Assembly)
- Forend Wedge (Polish head only)

File and/or polish all other parts including the heads of exposed screws. Periodically clean your file or files with a wire brush to insure that their cutting surfaces are clean.

NOTE: If the trigger guard does not fit exactly to the inlet provided, bend it slightly. The brass is ductile and will stretch to compensate for any shrinkage which may have occurred in the casting/cooling process. Drill screw holes with a 3/32" drill.



Ram Rod Assembly

A $\frac{3}{8}$ " wood Ram Rod is supplied. This rod is straight sided (not tapered). Either end may be used for the ram rod cap or jag adapter. Using a good quality epoxy glue (24 hour type recommended), affix the jag adapter and ram rod cap on the ends of the ram rod. Masking tape can be used to hold the parts tightly in position until the glue has hardened.

After the glue has hardened, sand the entire rod by hand using fine sandpaper. This is best accomplished by holding the sandpaper around the rod with your left hand and moving the rod back and forth with your right hand, turning it in a circular direction at the same time. Allow the sandpaper to run onto the brass so that you blend the wood to metal edge at the same time.

Final Finishing

If you have carefully followed the steps outlined all of the major work will now have been completed. With the exception of the sights, totally assemble your rifle. Seat all screws carefully to insure that all parts are "bottomed" and that they fit properly.

Now! It is time to carefully appraise and to evaluate your work. Be critical! This is the sign of a true craftsman. Check all edges, flow lines, etc., and decide how you can best improve them before final finishing. Check all wood screws. If a screw does not seat properly, remove it, plug the hole (with glued peg) and reseat the screw. If a part shows file marks, scratches or milling marks, remove it and dress it properly before you continue.

Now is the time to determine the proper "drop". Tap the front sight into the dovetail and secure the rear sight (Blade Assembly and Base) in position with masking tape. Sight along the barrel and decide if the comb and/or cheek piece are too high. If so, carefully remove the required wood.

After you have satisfied yourself that this job represents "your very best effort" continue finishing your stock, barrel, etc.

Disassemble the rifle and work with your finest grit sandpaper, emery, and crocus cloth. Carefully sand the stock (with the grain). After the stock is sanded, raise the grain with warm water. Apply the water to the grain with a cloth so that the surface is slightly damp, not wet or dripping. Keep the water away from inletted surfaces such as barrel channel, lock inlet, etc. After the stock has dried, resand it lightly with fine sandpaper.

Buff all brass parts and screw heads with crocus cloth. While working through the final stages of finishing, use great care to protect the freshly worked surface. Use the clamping arrangements previously recommended but further protect the stock with paper shims placed between the stock and clamp blocks.

Treating the Wood Surface

Many stock finishing kits are available. We recommend that you purchase one of these kits and that you follow the manufacturer's instructions when using the product.

Basically finishes fall into the two categories of dull (oil

finish) or high gloss (lacquer finish) and the difference depends largely upon individual preference. The dull finish is the most traditional for a muzzle loading firearm.

After the grain has been raised and the stock resanded and buffed, a preliminary treatment of "filling the grain" is required. This filling process produces a glass smooth surface for the stock finish and it is highly recommended. Again, consult your dealer for information on commercial stock fillers and follow the manufacturer's instructions. Finish the ram rod in the same manner as the stock.

Blueing or Browning Metal Parts

We do not recommend that you attempt to blue or brown any of the brass components. With the exception of springs and, of course, the finished lock, all other metal parts require some form of final finish. Here again it is a matter of preference. Browning is an acid and water oxidation process that was used in the 18th and 19th centuries for coloring steel to a "plum brown". This, of course, is the most traditional and there are commercial products available to produce such a finish. Consult your dealer or gunsmith. Blueing is the more modern method of finishing steel and this process segregates into two categories, Cold Blueing and Hot Blueing.

Our factory process is Hot Blueing which means that the steel is meticulously degreased and then submerged into a boiling acid solution, which imparts an overall blue-black finish to the metal. Considering the tanks and materials required, this process is not one for the home craftsman. However, the service is normally available from local gunsmiths. Consult your dealer or gunsmith if you wish your parts "Hot Blued."

Cold Blueing is the application of an acid solution that artificially induces rust. By means of controlled rusting and brushing, the surface of the steel acquires a blue finish. Many commercial products are available which allow the home craftsman to "cold blue" metal parts. Consult your dealer or gunsmith for information. One word of warning, question the durability of the finish which is produced by the product. Some products are intended as "touch up" blues and they are not very durable!

We thank you for purchasing our product and we hope that you will enjoy many happy hours both in building and in shooting your muzzle loading rifle. The instructional booklet packaged with your kit is the same material supplied with our factory model. It will caution you on correct loads and instruct you in the proper use of your rifle.

IMPORTANT NOTE:

All Thompson/Center factory finished rifles and pistols are backed by a Lifetime Warranty. This warranty does not apply to kit models such as the Hawken Kit. While Thompson/Center does guarantee the quality and workmanship of the parts contained in this kit (and will replace any part which is proven, by our inspection, to be faulty in either workmanship or material) we have no control over the final finishing and assembly of this product. Therefore, no responsibility for either the construction of or the use of this firearm is implied or assumed.

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